UNIT 3 BENCHMARK

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| **UNIT ASSESSMENT ALIGNMENT GUIDE** | | | | | |
| **Learning Goal #** | **Learning Goal** | **Aligned Item #’s** | **Points Correct** | **Points Possible** | **Grade**  (%) |
| **SPI 1.3** | **Apply properties to evaluate expressions, simplify expressions, and justify solutions to problems.** | **5, 8, 19** |  | **3** |  |
| **CFU 1.9** | **Identify and use properties of the real numbers (including commutative, associative, distributive, inverse, identity element, closure, reflexive, symmetric, transitive, operation properties of equality).** | **7, 17, 18** |  | **3** |  |
| **SPI 2.3** | **Describe and/or order a given set of real numbers including both rational and irrational numbers.** | **1, 3, 14** |  | **3** |  |
| **CFU 3.3** | **Justify correct results of algebraic procedures using extension of properties of real numbers to algebraic expressions** | **4, 12** |  | **2** |  |
| **SPI 1.2** | **Write an equation symbolically to express a contextual problem.** | **11, 24, 28** |  | **3** |  |
| **SPI 3.5** | **Write and/or solve linear equations, inequalities, and compound inequalities including those containing absolute value.** | **2, 9, 13, 16, 22, 27** |  | **6** |  |
| **SPI 3.5** | **Write and/or solve linear equations, inequalities, and compound inequalities including those containing absolute value.** | **6, 10, 15, 20, 23, 26, 29, 30** |  | **8** |  |
| **SPI 4.1** | **Develop and apply strategies to estimate the area of any shape on a plane grid.** | **21, 25** |  | **2** |  |
| ***TOTAL:*** | | |  | **30** |  |

1) Which shows the numbers ordered from least to greatest?

A) , , 2, 1.9

B) 1.9,, 2,

C) 1.9, 2, ,

D) , 1.9, 2,

2) *Solve:* x + 8 = 12 + 3x

A) x = -2

B) x = 2

C) x = -1.67

D) x = 0.67

3) Which is a rational number?

A)

B) 0.532532532….

C) all of the above

D) 14.125125125…

4) What is the value of the expression when a = and c = -2

A) 12

B) -2

C) -3.6

D) 2.8

5) *Simplify:* 8x + 4(-7x – 6) – 4(1 + 5x)

A) 34x – 28

B) -2x + 28

C) 40x – 28

D) none of the above

6) What is the solution to this inequality?

-5 + 6*m* < 7*m* + 2

A) *m* < -7

B) *m* ≥ -1

C) *m* ≥ -7

D) *m* <

Given: 5(x + 8) + 0 = 12

Step 1: 5(x + 8) = 12

7) Which property justifies moving from the Given to Step 1:

A) Commutative Property

B) Associative Property

C) Distributive Property

D) Identity Property

8) Find the area of the shape below:

x + 4

-2 -2

x + 4

A) 2x + 8

B) 2x – 8

C) -2x + 8

D) -2x – 8

9) *Solve:*  -b + 1 = -7 + 3b

A) n = 2

B) n = -4

C) n = -2

D) n = 4

10) What is the solution to this inequality?

7.9*m* + 6.9 + 3.3 > -19.82

A) 3.8

B) -1.2

C) *0*

D) all of the above

11) Joe received a $75 gift card from *i*Tunes. He wants to download as many

songs as possible onto his new *i*Phone. The songs are $2.95 for each song. What inequality would help him find how many songs (*s*) he could afford?

A) *s* > 75(2.95)

B) *s* < 75 – 2.95

C) 75 > 2.95*s*

D) 75 >

12) What is the value of the expression when m = -9 and n = 2/3?

2

+

A) 120

B) -123

C) -135

D) 108

13) *Solve:*  1.3(2a – 2) = -0.9

A) a = -1

B) a = 1

C) a = 0.65

D) a = -1.35

14) Which is correctly ordered from greatest to least?

A) -20/5 , - 2π, - 3.8, -

B) -, -20/5, - 3.8, - 2π

C) - 2π, -20/5 , - 3.8, -

D) -, - 3.8, -20/5 , - 2π

15) Which statement represents the solution to this compound inequality?

-10k – 9 < -59 or 9k – 5 < 4

A) k < 1 or k > 5

B) k > 1 or k < 5

C) 1 < k < 5

D) 1 > k > 5

16) What are the solutions to the equation below?

|-2b + 4| = 8

A) 2, -6

B) -2, 6

C) -2, -6

D) 2, 6

17) Tony wants to make 500 flyers for his lawn mowing business. At Staples, it costs $0.35 for color copies and $0.15 extra for the glossy paper. He knows the equation 500($0.35 + $0.15) will give him the cost of his flyers. He knows this will give him the price because it is the same as calculating 500($0.35) + 500($0.15). What property did Tony use to justify that these two expressions represent the same cost after the discount?

A) Associative Property of Multiplication

B) Commutative Property of Addition

C) Distributive Property of Multiplication

D) Identity Property of Addition

18) Which property justifies moving from Step 1 to Step 2:

Step 1: 5x + (40 + 14) = 12

Step 2: (5x + 40) + 14 = 12

A) Commutative Property

B) Associative Property

C) Distributive Property

D) Identity Property

19) *Simplify:* -3m2 – 4mn + m+ 2m(n + 6)

A) -3m2 – 2mn + 13m

B) -3m2 + 6mn + 12m

C) -2m2 – 2mn + 13m

D) -2m2 + 6mn + 12m

20) Which statement represents the solution to this compound inequality?

22 < 2v + 10 < 24

A) 6 < v < 7

B) 6 > v > 7

C) v > 6 or v < 7

D) v < 6 or v > 7

21) Estimate the area of the figure below:

A) 8

B) 12

C) 16

D) 20

22) What are the solutions to the equation below?

|5a + 10| – 25 = 100

A) 23, 27

B) -23, -27

C) 23, -27

D) -23, 27

23) Which could be a possible solution for the compound inequality below?

5 < 9 – 4n < 53

A) -1

B) -10

C) 0

D) all of the above

24) Walt and Reggie co-own a lawn care company. Together they have a daily

cost of $100 to run the company. If *w* represents the amount of money Walt

earns in a day, and *r* represents the amount of money Reggie earns in a day,

which equation represents the total profit, *p*, of their lawn care company.

A) p = w + r + 100

B) p = 100 – w + r

C) p = w + r – 100

D) p =

25) Estimate the area of the figure:

A) 10

B) 15

C) 20

D) 25

26) Which could be a possible solution for the compound inequality below?

15 + 12n > 99 or 4n – 19 < -35

A) 4

B) 7

C) -7

D) none of the above

27) *Solve:* 3(y – 3) = -2(y+ 17)

A) y = -8.6

B) y = 5

C) y = -12.5

D) y = -5

28) Shelby wants to rent a car for a weekend trip to Chicago. The rental car

company is running a special deal of a $20 flat fee plus $0.25 for each mile.

Shelby must also pay the insurance company $0.15 for each mile. Which

equation represents the total cost, *t* she must pay to rent the car and drive it *m*

miles?

A) t = 20 + (0.25 + 0.15)m

B) t = 0.25 + (20 + 0.15)m

C) t = 20 + 0.25 + 0.15m

D) t = 20m + 0.25 + 0.15

29) What is the solution for the following inequality?

|5x – 2| > 8

A) x < -2 or x >

B) x < - or x > 2

C) - < x <

D) - < x < 2

30) What is the solution for the following inequality?

|4y – 3| < 9

A) y > 3 or y < -1.5

B) y < -3 or y > 1.5

C) 1.5 < y < 3

D) -1.5 < y < 3

31-35) Choose a learning goal/standard from the front page and write how you would explain to a new student how to solve each problem. Don’t forget each step! (If you need more room, use a separate piece of paper.) Then create your own problem.

Standard: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Problem#: \_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_My new problem:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

36-40) Choose a different ­learning goal/standard from the front page and write how you would explain to a new student how to solve each problem. Don’t forget each step! (If you need more room, use a separate piece of paper.) Then create your own problem.

Standard: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Problem#: \_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_My new problem:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_